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XLIX.—*Descriptions and Records of Bees.*—LXXXII.

By T. D. A. COCKERELL, University of Colorado.

Exomalopsis mellipes, Cresson.

The male, not before known, has been collected by H. H. Hyde at Medellin, Vera Cruz, Mexico (Baker coll., 1785). It runs in Friese's table of males to *E. planiceps*, Sm., but is larger, with red legs.

Exomalopsis vincentana, Cockerell.

The male, previously unknown, was collected by H. H. Smith on the windward side of St. Vincent. It is hardly 5 mm. long, and there is much black hair on mesothorax, scutellum, and legs. It is nearest to *E. globosa*, but distinguished at once by the ochreous-yellow tarsi.

There is a series of small *Exomalopsis* (including *Anthophorula*), which are superficially similar and easily confused. They may be separated by the following table, based on females:—

Second abdominal segment with oblique stripes of light hair at sides, but no apical band	1.
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- Second abdominal segment with an apical hair-band 3.
1. Disc of scutellum with black hair *globosa* (Fabr.).
Disc of scutellum with fulvous hair 2.
2. Basitarsus with much black hair *pulchella*, Cresson.
Basitarsus with pale hair *similis*, Cresson.
3. Second segment of abdomen with a narrow apical band of snow-white hair *verbesinæ*, Ckll.
Second segment with a broad band 4.
4. Abdominal hair-bands clear white; eyes green *chlorina*, sp. n.
Abdominal bands greyish or yellowish; eyes not green 5.
5. Hind legs with much black hair 6.
Hind legs with hair mainly or nearly all pale; species of *Anthophorula* } 7.
6. Flagellum ferruginous beneath, abdomen broader *nitens*, Ckll.
Flagellum dark coffee-brown beneath *albovittata*, sp. n.
7. Tegulæ rufo-testaceous; stigma larger, pale amber *texana*, Friese.
Tegulæ dark; stigma smaller 8.
8. Disc of mesothorax polished and smooth *coquilletti*, Ashmead.
Disc of mesothorax punctured *morgani*, Ckll.

Exomalopsis albovittata, sp. n.

♀.—Length nearly 7 mm.

Closely allied to the Californian *E. nitens*, but less robust; flagellum dark; hair of face pure white; disc of mesothorax with fine but distinct punctures; hair of scutellum shorter and greyish instead of yellowish; hair on base of first abdominal segment pure white, apex of first segment with only a rather small patch of white hair on each side. The loose scopa of hind tibiæ and tarsi is black behind (above) and white in front; the wings are dusky, and the tegulæ are piceous.

Oaxaca, Mexico (*Crawford*). U.S. Nat. Museum.

There is some resemblance to *Leptergatis globulifera*, but the front is smooth and shining in the *Exomalopsis*, densely punctured in the *Leptergatis*.

Exomalopsis chlorina, sp. n.

♀.—Length about 6 mm.

Eyes bluish green; hair at sides of face dense and pure white; flagellum red beneath, dark above; hair of thorax white; tegulæ rufo-piceous; wings clear, stigma and nervures pale amber; stigma much smaller than in *E. texana*; bands on abdominal segments 2-5 broad and pure white; scopa of hind legs on outer side white, blackish at base of tibia,

dark fuscous on inner side of basitarsi; mesothorax very distinctly punctured; tarsi red at apex.

Las Cruces, New Mexico, at flowers of *Spharalcea* in garden of my house, Aug. 24 (*Cockerell*).

I had confused this with *E. texana*, but, having received a topotype of the latter, I find it is quite distinct.

Exomalopsis thermalis, sp. n.

♀.—Length about 9 mm.

Very robust, black; hair of head and thorax long and white, with a slight creamy tint; head very broad; eyes olive-green; labrum black; mandibles chestnut-red in middle; clypeus flattened, shining, sparsely punctured; flagellum chestnut-red beneath; mesothorax closely and strongly punctured; scutellum shining, with very fine punctures; tegulae bright rufo-fulvous. Wings yellowish, the large stigma and the nervures clear ferruginous; small joints of tarsi red; hair on inner side of tarsi ferruginous; middle tibiae with short fuscous hair on outer side beyond middle; middle basitarsi with long white hair on outer side; scopa of hind legs long and plumose, largely black on outer side, that on basitarsus of three colours—black, white, and red. Abdomen very broad, with a glaucous tint; first two segments closely punctured as far as the narrow arched pale hair-band, beyond that smooth and shining, the second segment with excessively minute punctures; segments 3 to 5 with broad bands of yellowish tomentum, the fifth broadly fringed with fuscous hair apically.

Agua-calientes, Mexico, Dec. 1, 1909 (*F. C. Bishopp*).
U.S. Nat. Museum.

Exomalopsis crucis, sp. n.

♀.—Length about 8.5 mm.

Closely allied to the last, differing thus: scape more or less reddish, especially at base; flagellum pale ferruginous beneath; labrum clear red, with pale reddish hair; hair of thorax above strongly tinged with yellowish; scutellum closely and very distinctly punctured; first abdominal segment reddish basally.

Medellin, Vera Cruz, Mexico (*H. H. Hyde*; Baker coll., 1785). U.S. Nat. Museum.

These two species are related to *E. mellipes*, Cress. (which has red legs); and more especially to *E. frederici*, Ckll., which has the tarsi, and tibiae at apex, ferruginous—at

least, in the male (female unknown). I questioned whether *E. thermalis* might be the female of *frederici*, but the fine short pile on basal part of third abdominal segment in *thermalis* is pale greyish ochreous, in *frederici* it is black. The hind spurs of *thermalis* and *crucis* are strongly curved at end, as in *frederici*. A second specimen of *E. crucis* comes from San Juan Allende, Mexico, Nov. 29 (C. H. T. Townsend).

Leptergatis globulifera, Cockerell.

The female, not before known, was taken by M. A. Carriker at Aroa, Venezuela, Dec. 12, 1910. It is much like *L. armata*, Sm., but has redder antennæ. From the female alone, I should have regarded the insect as a local race of *armata*.

Tetrapedia diversipes, Klug.

Manaos, Brazil (Miss H. B. Merrill); San Bernardino, Paraguay (K. Fiebrig).

Nomada calloptera, sp. n.

♂.—Length about 10.5 mm.; expanse about 18.5.

Head and thorax black, densely punctured, with long and abundant pale fulvous hair; lower corners of face broadly (with a sharply pointed extension upward along orbit), broad band along lower margin of clypeus, base of the simple mandibles, labrum (which is not dentate) and the rather stout scape in front, all yellow; eyes pale grey; flagellum thick, simple, black above (except the sutures), ferruginous beneath; third antennal joint brighter red, about half as long as fourth; scutellum bigibbous, very coarsely punctured; tubercles red and polished, but no other light marks on thorax; tegulae red. Wings clear, the apex fuscous; stigma clear bright ferruginous, nervures fuscous; b. n. going a short distance basad of t.-m.; first and second t.-c. nervures convex outwardly. Legs red, anterior tibiae with an apical yellow spot; middle trochanters black above, with a red spot, and highly polished; middle femora black beneath basally; hind femora black behind except at apex. Abdomen red with rather pale yellow markings, hind margins of first three segments broadly fuscous, first segment with more than basal half black, and small yellow marks sublaterally; second segment black at base, and with a very large yellow patch (not pointed mesad) on each side; third

with a very broadly interrupted yellow band, excavated behind sublaterally; fourth to sixth with yellow bands, interrupted by a red spot on each side; apical plate broad, notched; venter red with yellow bands.

Tokyo, Japan, April 12, 1909 (*Sasaki*). U.S. Nat. Museum. It is also labelled Yamada.

In the table of Palearctic species it runs near *N. manni*, Moraw., differing by the black scutellum. It is quite distinct from all those described from Japan. It is a large species of *Nomada*, s. str.

Nomada pyrifer, sp. n.

♀.—Length about 10 mm.

Head and thorax red with black markings, closely punctured, the hair white; labrum pale yellow, with no distinct tooth; malar space pale yellowish; mandibles simple, red, black at apex; lower part of elypens, and lower part of supraclypeal area, suffusedly yellowish; middle of front, extending to occiput, black, and cheeks black with a broad red band behind eyes; antennæ entirely red, long, reaching to base of abdomen; third joint scarcely half as long as fourth (this at once separates it from the superficially similar *N. japonica*, Sm.); mesothorax with three black bands, confluent in front; scutellum strongly elevated, entirely red; area of metathorax black in middle and red sublaterally; pleura nearly all red; no yellow on thorax; tegulæ pale red. Wings clear, dilute fuscous at apex; stigma ferruginous; nervures fuscous; b. n. going far basad of t.-m.; second s.m. very broad, receiving first r. n. about middle. Legs bright ferruginous, hind femora with a black stripe behind. Abdomen smooth and polished, ferruginous; basal half of first segment black, second segment with a very large pyriform (pointed mesad) spot on each side; fourth and fifth segments with yellow bands, failing laterally; venter with broad yellow bands.

Japan (presumably Tokyo), May (*Sasaki*). U.S. Nat. Museum.

This also runs near *N. manni* in the Palearctic fauna, but is readily distinguished by the pattern of abdomen and the red scutellum. *Sasaki* collected two males, of different species, which looked like *N. pyrifer*. One I have described as *N. calloptera*, as it differs from *pyrifer* in the colour of the stigma and the basal nervure going less basad; the other, collected at Tokyo in April, I suppose to be the true male of *pyrifer*. It is unfortunately in very bad condition, but

the following characters can be made out: mandibles largely yellow; face densely covered with white hair; scape swollen, yellow in front; mesothorax all black; tubercles yellow; scutellum with yellowish or reddish spots; metathorax and pleura all black; venation and colour of stigma as in *pyriferæ*; first abdominal segment with basal half black, apical half red, and two large yellow spots, not far apart, on the red; second segment with pyriform marks larger, meeting in the middle line; segments 3 to 6 with entire yellow bands; apical plate feebly notched; venter with yellow bands.

Andrena melanospila, sp. n.

♀.—Length 10 mm.

Black, the head and thorax with copious moderately long hair, dull white on face, cheeks, and pleura, pale fulvous on occiput and dorsum of thorax (brightest on scutellum), but black on mesothorax posteriorly, and on front and vertex; malar space linear; process of labrum rather narrow, obtuse; clypeus brightly polished, with sparse small punctures; facial foveæ broad, dark brown, not extending below level of antennæ; antennæ dark; third joint much longer than fourth, but not quite as long as fourth and fifth; mesothorax dull and granular, shining posteriorly; scutellum shining, without evident punctures; area of metathorax dull and finely granular; tegulæ piceous. Wings dusky, the large stigma and nervures dull reddish; b. n. meeting t.-m.; second s.m. receiving first r. n. distinctly beyond middle; scopa of hind tibiæ white in front and black behind. Abdomen dull, not punctured; second segment depressed scarcely a fourth; hind margins of segments 2 to 4 with narrow pure white hair-bands; caudal fimbria purplish black.

Soochow, China (*N. Gist Gee*). U.S. Nat. Museum.

In the Palæartic fauna this falls near to *A. denticulata* (Kirby), from which it is easily separated by the narrow white abdominal bands and the black and white hair of hind tibiæ. It is not like any of the species described by Strand from Tsingtau. The abdominal bands are as in *A. wilkella*, but that has an entirely different clypeus.

Andrena delicatula, sp. n.

♂.—Length 8 mm.

Black, superficially exactly like *A. albicus*, but running in tables of Palæartic species to *A. lapponica*, which is a

larger insect. Hair of head and thorax long and white, very faintly yellowish on scutellum, a little blackish hair at sides of face; mandibles long and curved; process of labrum weakly bilobed; clypeus dull, covered with long white hair; antennæ entirely dark; third joint about equal to fourth; mesothorax and area of metathorax dull and granular; tegulæ piceous, reddish posteriorly. Wings slightly dusky; the large stigma and nervures dull ferruginous; b. n. falling some distance short of t.-m.; second s.m. broad, receiving first r. n. at middle. Legs black, tarsi reddish at apex. Abdomen shining, not punctured, segments 2 to 4 with thin white hair-bands at sides only; apex emarginate.

Soochow, China (*N. Gist Gee*, 121). U.S. Nat. Museum.

The abdomen has little of the long loose hair so conspicuous in *A. albicus*. Among the Japanese species, this falls nearest to *A. præcociformis*, Ckll., which is larger, with shining clypeus and chestnut-red stigma. The cheeks are broader and flatter in *A. delicatula*. From Soochow also comes *Nomia chalybeata*, Smith (*N. Gist Gee*, 140).

† *Agapostemon cockerelli*, Crawford.

Longmont, Colorado, Sept. 7, 1918 (*Cockerell*). New to Colorado.

Colletes sieverti, Cockerell.

Gregory Canyon, Boulder, Colorado, July 13 (*Cockerell*).

Trigona ruficus corvina, Cockerell.

Chagres River, Panama Canal Zone, Oct. 9, 1917, "chewing on the leaves of young citrus plants" (*Harold Morrison*).

L.—*A new Species of Eligmodontia from Catamarca.*

By ULDFIELD THOMAS.

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THE British Museum has recently received a small collection of mammals from Chumbicha, Catamarca, collected by Sr. E. Budin, and among them there occur specimens of the following new species:—